VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a minor, municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards 9 VAC 25-260-10 et.seq. The discharge is a result of the operation of a municipal wastewater treatment plant treating sewage originating from a marina and restaurant, and possible residential sources. This permit action includes revised effluent limitations and special conditions in the permit.

1. Facility Name and Location Address: Dozier's Marine Center
Location: Route 33, Deltaville, VA

Mailing Address: P.O. Box 1188
Deltaville, VA 23043

Facility Owner: Dozier Marine, Inc.
Title: Owner
Mailing Address: Same as facility
Telephone: (804) 776-8400
Owner and Facility Contact: John C. Dozier
Email: jcd990@gmail.com

2. SIC Code(s): 4952 - Sewerage Systems
4493 - Marinas

3. Permit No. VA0087629 Permit Expiration Date: September 28, 2013

4. Application Complete Date: Date: June 20, 2013/September 26, 2013 (with VPDES Permit Application Addendum submittal).

Permit Drafted By: Tamira Cohen Date: July 22, 2013

DEQ Regional Office: Piedmont Regional Office

Reviewed By: Emilee C. Adamson Date: August 11, 2013

5. Receiving Stream:

Name:	Broad Creek
River Mile:	3-BRD000.38
Basin:	Rappahannock River
Subbasin:	N/A
Section:	1
Class:	II
Special Standards:	a

Tidal? YES – Statistical low flows not applicable to tidal receiving waters

Tidal dilution ratios used*:

Acute Toxicity:	14.3:1	(mixing zone = 14.3 parts receiving water, 1 part effluent)
Chronic Toxicity:	50:1	(mixing zone = 49 parts receiving water, 1 part effluent)
Human Health:	50:1	(mixing zone = 49 parts receiving water, 1 part effluent)

On 303(d) list? YES

See **Attachment A** for 6/20/2013 Flow Frequency Memorandum by J.Palmore, P.G.

*An error made in the 2008 permit reissuance with respect to tidal dilution ratios is corrected with this 2013 reissuance (previously listed as 15.3:1 for acute toxicity and 51:1 for chronic toxicity and human health). The revised ratios are consistent with the dilution factor and corresponding instream waste

concentration (IWC) noted in M. Dale Phillips April 13, 1993 memo (**Attachment B**). The revised ratios noted above are used in the limitation evaluation described below in Item #16.

6. Operator License Requirements: Class IV
The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collections and Treatment Regulations (SCAT) 9 VAC 25-790-300.

7. Reliability Class: Class I
Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class I Reliability for this facility.

8. Permit Characterization:

	Issuance		Existing Discharge
X	Reissuance	X	Proposed Discharge
	Revoke & Reissue	X	Effluent Limited
	Owner Modification	X	Water Quality Limited
	Board Modification		WET Limit
	Change of Ownership/Name		Interim Limits in Permit
	Effective Date:		Interim Limits in Other Document (attached)
X	Municipal		Compliance Schedule Required
	SIC Code(s): 4952,4493		Site Specific WQ Criteria
	Industrial		Variance to WQ Standards
	SIC Code(s):		Water Effects Ratio
	POTW	X	Discharge to 303(d) Listed Segment
X	PVOTW		Toxics Management Program Required
X	Private		Toxics Reduction Evaluation
	Federal		Possible Interstate Effect
	State		Storm Water Management Plan

9. Wastewater Flow and Treatment:

Table 1: Wastewater Flow and Treatment

Outfall Number	Wastewater Source	Treatment	Design Flow
001	Showers and restrooms for marina patrons and employees, restaurant, and possible condominium units	flow equalization, aeration, clarification, ultraviolet disinfection*, post-aeration, sludge wasting and holding chamber	8,500 gpd (0.0085 MGD)

*Disinfection treatment is revised in this reissuance in accordance with the 2013 application.

Please note that the wastewater treatment plant has not yet been built nor designed as of the 2013 permit reissuance application.

10 Sludge Disposal: Waste sludge will be held in a holding tank and disposed of by a licensed contract hauler as needed. Documentation of sludge use and disposal activities will be submitted and approved, in accordance with Part I.C.5 of the 2013 permit, at least 120 days following the issuance of a Certificate to Operate for the facility.

11. Discharge Location Description: This facility discharges to Broad Creek in Deltaville, VA.
Name of USGS topo map: Deltaville– 122D (See **Attachment C**)

12. Material Storage: Chemicals used for the wastewater treatment plant are required to be handled in such a manner so as not to permit a discharge of those chemicals in accordance with Part I.C.8 of the 2013 permit.

13. Ambient Water Quality Information:
Ambient water quality data was obtained from monitoring station 3-BRD000.31. This station is located on Broad Creek at the end of Route 636, across the stream from Dozier's Marine. Please see Item 16 of this fact sheet for further information regarding how the data were used for 2013 permit development. See **Attachment A** for ambient data.

14. Antidegradation Review and Comments:
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Broad Creek has historically been considered a Tier 2 water because previous modeling determined that "the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable (sic) effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to at least an aggregate flow of 1.0 MGD" (Phillips, 1992). Review of local monitoring data from station 3-BRD000.31 shows that on two occasions dissolved oxygen values were at or only slightly above 5.0 mg/L. Due to this the stream should be considered Tier 1. (See **Attachment A** for Flow Frequency Analysis by J.Palmore dated June 20, 2013 and **Attachment B** for Broad Creek Model in the M.D. Phillips 1992 Memo).

15. Site Inspection: By Compliance Staff on February 8, 2013. (See **Attachment D**)
Please note that the above document is not an actual inspection but instead an inspection reduction memo to the file by DEQ-PRO Compliance Staff confirming that the facility has not yet been constructed as of November 2012.

16. Effluent Limitation Development:

Table 2 –Basis for 2013 Permit Limitations

PARAMETER	BASIS FOR EFFLUENT LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	NA	NL		NA		NA	NL	1/Day	Estimate
pH	1,3	NA		NA		6.0 SU	9.0 SU	1/Day	Grab
BOD_5	2, 3	30 mg/L	960 g/d	45 mg/L	1400 g/d	NA	NA	1/Month	Grab
Total Suspended Solids (TSS)	2, 3	30 mg/L	960 g/d	45 mg/L	1400 g/d	NA	NA	1/Month	Grab
Total Residual Chlorine (TRC)*	1	0.19 mg/L		0.19 mg/L		NA	NA	1/Day	Grab
Dissolved Oxygen (DO)	2	NA		NA		5.0 mg/L	NA	1/Day	Grab
Fecal Coliform	1	200 N / 100 mL (Geometric Mean)		NA		NA	NL	1/Week (10am - 4pm)	Grab
Enterococci	1	35 N / 100 mL (Geometric Mean)		NA		NA	NL	1/Week (10am - 4pm)	Grab

*TRC monitoring and limitations shall only become effective if UV disinfection is replaced with chlorine disinfection.

1. Water Quality Standards (9 VAC 25-260)
2. Best Engineering Judgment (BEJ)
3. Federal Effluent Guidelines (40 CFR 133.102)

Water Quality Standards**:**

pH: A pH limitation of 6.0 to 9.0 standard units is assigned to all discharges into Class II Estuarine Waters in accordance with the Water Quality Standards (WQS), 9 VAC 25-260-50, and federal secondary treatment standard guidelines.

Total Residual Chlorine (TRC) and Ammonia as N: If it is feasible that a specific pollutant for which in-stream criteria are given in the *Virginia Water Quality Standards* (9 VAC 25-260 et.seq.) may exist in the facility's effluent, a Reasonable Potential Analysis must be conducted in order to determine if it is statistically probable that the permittee's future discharge may contain that pollutant in concentrations which are harmful to aquatic life and/or human health within the receiving stream. The first step of the analysis is to calculate the pollutant's acute and chronic wasteload allocations

(WLA's), which are defined as the pollutant concentration that may be discharged by the facility over specific periods of time which will maintain the in-stream criteria referenced above. The WLA's are determined using a DEQ-sourced Excel spreadsheet called MSTRANTI, which requires inputs representing site specific data for critical flows, dilution, mixing, and water quality for both the receiving stream and the effluent. After the WLA's are calculated, a desktop computer application called STATS is utilized to determine if future pollutant concentrations may exceed the WLA's. The STATS application fits the WLA's, as well as observed effluent data, to respective lognormal distributions. If the projected effluent distribution exceeds either of the projected WLA distributions, then a limitation is deemed necessary. The limitation is equal to the concentration expected to be observed at the proposed limitation monitoring frequency within the most protective projected WLA distribution.

The inputs required by MSTRANTI for critical ambient water quality for this facility were calculated using data from monitoring station 3-BRD000.31 (see **Attachment A**). Since this facility has not been constructed, the effluent inputs for MSTRANTI were either based on conservative assumptions, or were derived from DMR data reported by Bay Marine Ltd. STP (VA0087173) between 2010-2013 (see **Attachment E**). Bay Marine Ltd. STP is a permitted facility with effluent quality and geographic location similar to those proposed for this facility. Please see Table 3 below for specific inputs.

Table 3: MSTRANTI Source Data

			Temp. (°C)	pH (SU)	Salinity (g/kg)	Hardness (mg/L as $CaCO_3$)
Ambient Inputs (**Attachment A**)	3-BRD000.31: (May 2007 – November 2010)	90th Percentile	28.4	8.1		N/A for Saltwater Discharges
		10th Percentile	5.7	7.4		
		Average			15.8	
Effluent Inputs (**Attachment E**)	Conservative Assumption	90th Percentile	28*			
	DMR from Bay Marine Ltd. STP	90th Percentile		7.81		
		10th Percentile		7.12		
Tidal Dilution Ratios (**Attachment B**)	See Item #5 above and M. Dale Phillips April 13, 1993 memo in **Attachment B**.					

*Please note that the 90th percentile effluent temperature used for the 2013 analysis is a conservative assumption, which differs from that of the 2008 permit which used effluent data from Bay Marine Ltd. STP facility. This difference is due to the fact that the Bay Marine Ltd. STP is entirely enclosed in a building, and therefore variations in effluent temperature may not be representative of a discharge from an outdoor treatment works.

For Ammonia and Total Residual Chlorine, GM 00-2011 requires that values of 9.0 mg/L and 20 mg/L, respectively, be entered into STATS as effluent data in order to bypass the program's Reasonable Potential Analysis because these pollutants are either purposely introduced or known to exist in this facility's effluent.

The Ammonia and TRC limitation evaluations indicated that no ammonia limitation is required (same as 2008 reissuance) and that slightly more stringent limitations are needed for TRC (0.20 mg/L in 2008 reissuance) to maintain Water Quality Standards in the receiving stream. This change is likely due to corrections made to MSTRANTI inputs as detailed above. TRC limitations were removed from Part I.A. (Outfall 001) in accordance with 2013 application indicating UV disinfection as the disinfection treatment type. The TRC limitations are conditional and take effect if chlorination rather than UV disinfection is used. Further requirements are included in Part I.B. of the 2013 permit.

Please note that the wasteload allocations entered into STATS for the TRC limitation evaluation are for Chlorine Produced Oxidants (CPO). Chlorinated effluents discharged to salt water react to produce chlorine produced oxidants that have a toxic impact similar to TRC in freshwater. It is

assumed that CPO in salt water receiving streams is controlled by the effluent TRC limit and are therefore interchangeable.

Please see **Attachment F** for the 2013 and 2008 MSTRANTI and STATS printouts.

Fecal Coliform: For sewage discharges that may reach shellfish waters, permits limit fecal coliform with an effluent limit of 200 colony forming units per 100 milliliters, applied as a monthly geometric mean. Although the Water Quality Standards have been amended to remove the reference to this effluent limit in shellfish waters, the Virginia Department of Health, Bureau of Shellfish Sanitation still uses fecal coliform as an indicator for determining the quality of shellfish waters, and it is necessary to ensure discharges meet this level. Since it has historically maintained the in-stream water quality criteria for fecal coliform of 14/43 per 100 milliliters, the 200 per 100 milliliters effluent limit will be used in shellfish waters in order to continue meeting the in-stream criteria and for protection of shellfish under the general standard. Monitoring frequencies are 1/Week when alternate disinfection is used and 4/Month when chlorination is used. These slightly different frequencies are included in Part I.A and Part I.B, respectively, in accordance with the primary disinfection treatment type (UV) identified in the 2013 application.

Enterococci: The limitation for Enterococci is expected to protect the primary contact recreation use bacteria criteria outlined in 9 VAC 25-260-170 (Water Quality Standards). The primary contact recreation bacterial in-stream criteria for protection of saltwater is 35N/100 mL colony forming units (CFU) of Enterococci bacteria based on a monthly geometric mean resulting from weekly samples. Monitoring frequencies are 1/Week when alternate disinfection is used and 4/Month when chlorination is used. These slightly different frequencies are included in Part I.A and Part I.B, respectively, in accordance with the primary disinfection treatment type (UV) identified in the 2013 application.

Best Engineering Judgment:

DO: The DO limitation of a minimum 5.0 mg/L is based on Best Engineering Judgment and carried forward from the 2008 permit reissuance. This limitation also coincides with the Water Quality Standard for Class II waters as per 9VAC25-260-50. Given that local monitoring data from station 3-BRD000.31 has shown DO at or only slightly above the water quality standard (on two occasions), and the consequent reclassification of the receiving stream to Tier 1, this limitation is considered necessary for protection of water quality.

BOD_5 and TSS: The BOD_5 and TSS limitations are based on secondary treatment standards (Federal Effluent Guidelines, §40 CFR 133.102) as recommended in the Broad Creek Model mentioned above. The 1992 model indicates that discharges of conventional pollutants meeting secondary limits to Broad Creek below an aggregated flow of 1.0 MGD will have no calculable effect on dissolved oxygen concentrations due to rapid tidal flushing.

As of the drafting of this permit's 2013 reissuance, there are four permitted facilities authorized to discharge into Broad Creek. Their names and design flows are listed below. The aggregated design flows of these facilities is 65,500 gallons per day. Consequently, water quality based conventional limitations are not required for this facility.

VA0090921: Regatta Point Yacht Club STP	30,000 gpd
VA0087629: Dozier's Marine Center	8,500 gpd
VA0087173: Bay Marine Ltd. STP	7,000 gpd
VA0087611: Norview Marina	20,000 gpd
	65,500 gpd

Please note that the current 2013 TSS and BOD_5 loading limitations (960 g/D) appear more stringent than the 2008 (970 g/D) limitations. This is a reflection of the correct application of the rules for rounding in DEQ GM06-2016. The loading limitations are based on the monthly average

concentration limitations of 30 mg/L and current proposed design flow for the facility (0.0085 MGD). The calculation for the loading limitations gives 965.175 which (given the precision of 2 significant figures) correctly rounds to 960 g/D (when the digit 5 is dropped, the preceding digit is rounded off to the nearest even number). This does not reflect a change in the underlying limitation but rather is a revision of the expression of the limitation.

Please see **Attachment B** for Broad Creek Model by M.D. Philips dated September 22, 1992.

Monitoring Frequencies
Sampling frequencies all parameters were selected based on the current VPDES Permit Manual (GM10-2003, revised August 25, 2011, Section MN-2) recommendations.

17. Basis for Sludge Use & Disposal Requirements: Not applicable, as this facility will not land apply sludge.

18. Antibacksliding: All limitations in the 2013 permit reissuance are the same as or more stringent than the limitations in the 2008 permit reissuance.

19. Special Conditions:

Part I.B. - Additional Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Water Quality Standards 9VAC25-260-170, Bacteria; Other Recreational Waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

Part I.C

a. Special Condition C.1 – 95% Capacity Reopener
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 4 for all POTW and PVOTW permits.

b. Special Condition C.2 – Operations and Maintenance Manual Requirement
Rationale: Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

c. Special Condition C.3 – Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18 VAC 160-20-10 et seq.), require licensure of operators.

d. Special Condition C.4 – Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

e. Special Condition C.5 – Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B 2, and 420 through 720; and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

f. Special Condition C.6 – Sludge Reopener
Rationale: Required by VPDES Permit Regulation 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

g. Special Condition C.7 – Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limitation or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. The minimum quantification levels specified in this special condition are equal to those recommend in GM10-2003 (MN-3, Pg. 14) except for the BOD_5 QL, which is consistent with recently adopted VPDES General Permit regulations.

h. Special Condition C.8 – Materials Handling/Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

i. Special Condition C.9 - Total Maximum Daily Load (TMDL) / Nutrient Reopener
Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed it they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

j. Special Condition C.10—Indirect Dischargers
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1 & B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

k. Special Condition C.11 – CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790-50. 9 VAC 25-40-70.A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

l. Special Condition C.12 –Financial Assurance and Disclosure to Purchasers
Rationale: Required by Code of Virginia § 62.1.-44.18:3 and the Board's Financial Assurance Regulation, 9 VAC 25-650-10 et seq. Please note that the special condition language does not match current agency boilerplate, and is tailored to accommodate the permittee's uncertainty that the proposed treatment works may or may not serve residences. This language was approved by DEQ's Office of Financial Assurance on March 15, 2012 via email.

m. Special Condition C.13 - Treatment Works Closure Plan
Rationale: §62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

n. Special Condition C.14 – Nutrient Offset Requirements
Rationale: §62.1-44.19:15 of the State Water Control Law requires any owner of a domestic sewage treatment plant with a design flow of between 1,000 and 39,999 gallons per day that did not commence discharge as of January 1, 2011 to demonstrate to the Department that he has acquired wasteload allocations or compliance credits sufficient to offset his delivered total nitrogen and total phosphorus loads prior to the commencement of discharge.

20. Part II, Conditions Applicable to All VPDES Permits
The VPDES Permit Regulation at 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to 2008 Permit: The tables below represent a summary of the limitations and monitoring requirements changes to the 2008 permit.

Table 4: Changes to Limitations and Monitoring (Part I.A.)

PARAMETER	DISCHARGE LIMITATIONS								MONITORING REQUIREMENTS				Reason for Change
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM		MAXIMUM		FREQUENCY		SAMPLE TYPE		
	From	To	From	To	From	To	From	To	From	To	From	To	
TSS/BOD_5	970 g/D	960 g/D	No Change		NA		NA		No Change		No Change		Change in limitation expression with correct application of roundin rules. See Item #16 above for additional comments.
Total Residual Chlorine (TRC)	0.20 mg/L	Not Required	0.20 mg/L	Not Required	Not Required		Not Required		1/Day	Not Required	Grab	Not Required	Parameter limitation and monitoring requirements deleted as per 2013 application which indicates UV disinfection will be used. TRC monitoring/limits not required unless chloriniation disinfection is in use as per GM10-2013. See Item #16 above for additional comments.
Fecal Coliform/ Enterococci	No Change		No Change		No Change		No Change		2/Month (between 10am and 4pm)	1/Week (between 10am and 4pm)	No Change		Monitoring frequencies revised to reflect those required in GM10-2003 for alternate disinfection as UV disinfection is indicated in the 2013 application. See Item #16 above for additional comments.

Table 5: Other Changes to 2007 Permit

	From	To	Permit Section Changed	Reason for Change	Date
Changes to Part I.A	Part I.A.1	Part I.A. and Part I.A.1	Authorization statement	Language enhanced for acuity purposes and in accordance with GM10-2003.	
	Part I.A.1(a)	Part I.A.1(a)	Design flow footnote	No Change	07/13
	Part I.A.1(b)	Part I.A.1(b)	Significant figures footnote	"Digits" changed to "figures" to match GM06-2012.	
	Part I.A.2	Part I.A.2	No discharge floating solids/foam	No Change	
	Part I.A.3	Part I.A.3	Sample location	No Change	
	Part I.A.4	Part I.A.4	Part I.B reference	Language revised to include reference to bacterial requirements.	
	Part I.A.5	Part I.A.5	85% removal BOD_5 & TSS	No Change	
Special Conditions Added or Modified	Part I.B	Part I.B	Additional (TRC) Limitations and Monitoring Requirements	Revised in accordance with GM10-2013 to reflect UV disinfection as primary disinfection treatment (as per 2013 application). Note special condition title change (TRC deleted). See Item #16 above for additional comments.	
	Part I.C.1	Part I.C.1	95% Capacity Reopener	No Change	
	Part I.C.2	Part I.C.2	O & M Manual	Revised to reflect boilerplate language released by OWP&CA on 4/3/2012	
	Part I.C.3	Part I.C.3	Licensed Operator	DPOR regulation name changed to match current regulation. Language also revised to reflect CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	
	Part I.C.4	Part I.C.4	Reliability Class	No Change	
	Part I.C.5	Part I.C.5	Sludge Use and Disposal	Revised to reflect current agency guidance (GM10-2003). Language further revised to reflect CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	
	Part I.C.6	Part I.C.6	Sludge Reopener	No Change	
	Part I.C.7	Part I.C.7	Compliance Reporting	Revised to reflect current agency guidance (GM10-2003). Language further revised according to regional procedure and for clarity purposes. BOD_5 QL revised from 5 mg/L to 2 mg/L for consistency with recently adopted VPDES General Permit regulations.	
	Part I.C.8	Part I.C.8	Materials Handling/Storage	Revised to reflect agency boilerplate contained in GM10-2003.	
	Part I.C.9 / Part I.C.12	Part I.C.9	TMDL / Nutrient Reopener	Language revised to reflect current agency guidance (GM07-2008 Amnd.2). Revised language addresses both nutrient reopener and TMDL reopener.	
	Part I.C.10	Part I.C.10	Indirect Dischargers	No Change	
	Part I.C.11	Part I.C.11	CTC, CTO Requirement	Revised wording to reflect current agency guidance (GM10-2003) and current nutrient guidance (GM07-2008, Amnd.2)	
	--	Part I.C.12	Financial Assurance	Added in accordance with GM10-2013. Reflects CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	
	--	Part I.C.13	Treatment Works Closure Plan	Added. Reflects SCAT regulations requirements (9 VAC 25-790-120 E.). Added in case the permittee decides to construct the facility without residential development.	

	From	To	Permit Section Changed	Reason for Change	Date
	--	Part I.C.14	Nutrient Offset Requirements	Added due to §62.1-44.19:15.A.5 (see Item 19 of this fact sheet). This facility has not yet been built and therefore must demonstrate that all proposed nutrient loadings have been offset prior to commencement of discharge.	
Changes to Cover Page	The structure and language of the cover page have been slightly modified in accordance with new agency procedures and for streamlining purposes. The signatory title has also changed in accordance with the permit manager work title change effective June 2013.				

22. Variances/Alternate Limits or Conditions: None.

23. Regulation of Users: 9VAC25-31-280 B 9: There are no industrial users contributing to the treatment works.

24. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: Start Date: August 22, 2013 End Date: September 23, 2013
Published Dates: August 22, 2013 and August 29, 2013
Name of Newspaper: *Southside Sentinel*

All pertinent information is on file and may be inspected or copied by contacting Tamira Cohen at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/698-4368
Facsimile Number 804/527-5106
Email Tamira.cohen@deq.virginia.gov

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment, or may request copies of the documents from the contact person listed above.

25. 303(d) Impaired Waters / Total Maximum Daily Load (TMDL):

During the 2010 305(b)/303(d) Water Quality Assessment, Broad Creek was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). The Recreation Use is impaired due to enterococcus violations. The Aquatic Life Use is impaired

because the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, failed the Open Water summer 30-day mean dissolved oxygen criteria. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use is fully supporting and the Fish Consumption Use was not assessed. The area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

During the draft 2012 Assessment, Broad Creek was considered a Category 4A water ("impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific pollutant(s) is complete and US EPA approved.") The Aquatic Life Use is impaired for dissolved oxygen. Although the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, met all assessed dissolved oxygen criteria, the segment is considered impaired due to EPA policy. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use and Recreation Uses are fully supporting and the Fish Consumption Use was not assessed. As stated above, the area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

The Broad Creek Shellfish TMDL was approved by the EPA on 6/7/2006 and by the SWCB on 6/27/2007. The facility was not addressed in the TMDL because the portion of Broad Creek to which the yacht club discharges is a prohibited zone and the Shellfish Use is considered to be removed.

Dozier's Marine Center was included in the Chesapeake Bay TMDL, which addressed dissolved oxygen, chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the mainstem Bay and its tidal tributaries. The TMDL was approved by the EPA on 12/29/2010.

a. *Chesapeake Bay TMDL*: This facility discharges directly to Broad Creek in the Chesapeake Bay watershed in the Rappahannock River mesohaline segment (RRPMH), which extends from a cross section of the river located at Mulberry Island, downstream to the mouth of the river, which extends from the southernmost tip of Fleets Island south to Stingray Point. The receiving stream has been addressed in the Chesapeake Bay TMDL, approved by EPA on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185.

   Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820) as controlling the nutrient allocations for Chesapeake Bay dischargers. The approved WIP states that for non-significant Municipal and Industrial facilities, nutrient WLAs are to be consistent with Code of Virginia procedures. Code of Virginia procedures (§62.1-44.19:15.A.5) and DEQ regulations (9VAC25-820-70.G.1.c) require facilities treating domestic sewage with design flows greater than 1,000 gallons per day and up to 39,999 gallons per day that have not commenced discharge prior to January 1, 2011 to register for coverage under the General VPDES Watershed Permit and demonstrate they have acquired WLAs sufficient to offset their entire delivered nutrient loads for a period of at least five years. In accordance with the WIP, TN and TP (load-based) WLAs for non-significant facilities are considered aggregate allocations

and will not be included in individual permits. The WIP also considers Total Suspended Solids (TSS) WLAs for non-significant facilities to be aggregate allocations, but TSS limits are to be included in individual permits in conformance with the technology-based requirements of the Clean Water Act. However, the WIP recognizes that so long as the aggregated TSS permitted loads for all dischargers is less than the aggregated TSS load in the WIP, the individual permit will be consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is considered a new non-significant Chesapeake Bay discharger because the facility did not commence discharge prior to January 1, 2011, and has a permitted design flow of greater than 1,000 gallons per day and less than 100,000 gallons per day into tidal waters.

The facility owner has registered for coverage under the VPDES Nutrient General Permit (GP). DEQ has provided coverage under the VPDES Nutrient General Permit (GP) for this facility under registration number VAN0020163 (see **Attachment G**). The requirements of the Nutrient GP for this facility will be consistent with the Chesapeake Bay TMDL.

The permittee has indicated there is no present plan to construct a treatment facility and to begin discharging during the five-year terms of the VPDES individual and Nutrient General Permit (see **Attachment G**). Consequently, during the term of this individual permit, there will be no anticipated discharge of Total Nitrogen or Total Phosphorus requiring offset in accordance with 9VAC25-820-70.H.1.e. This nutrient offset plan satisfies statutory and regulatory requirements for the delivered nutrient loads from discharges of new facilities to be entirely offset, and is consistent with the Chesapeake Bay WIP and TMDL.

This individual permit includes technology-based TSS limits of 30 mg/L that are also consistent with the Chesapeake Bay TMDL and WIP. In addition, the individual permit has BOD_5 and DO effluent limits of 30 mg/L and 5.0 mg/L, respectively, which provide protection of instream DO concentrations to at least 5.0 mg/L. Implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient tidal conditions such that the proposed effluent limits of this individual permit are consistent with the Chesapeake Bay TMDL, and will not cause an impairment or observed violation of the standards for DO, chlorophyll a, or SAV as required by 9VAC25-260-185.

b. *Dissolved Oxygen (DO):* The 2013 permit has limitations of 30 mg/L BOD_5, and minimum 5 mg/L for DO (based on 9 VAC 25-151-50 of the *Water Quality Standards*) as recommended in the most current Broad Creek Model. These limitations were determined to be protective of water quality within the receiving stream, and therefore, the proposed facility is not expected to cause nor contribute to the existing DO impairment in the Rappahannock River mesohaline estuary.

c. *Enterococci:* The 2013 permit has a limitation for enterococci (35N/100 mL monthly geometric mean) which is equal to the Water Quality Standard (see Item 16 of this fact sheet). Therefore, the facility, when it begins discharging, is not expected to contribute to the current Recreation Use enterococci impairment.

d. *Broad Creek Shellfish TMDL:* As stated above, this facility was not included in the Broad Creek Shellfish TMDL because the shellfish use is considered to be removed at the discharge point. Regardless, a limitation for fecal coliform has been included in the 2013 permit to address protection of the shellfish use (see Item 16 of this fact sheet).

26. Additional Comments:

a. Previous Board Action: None

b. Staff Comments:

- One of this facility's SIC codes (4493) designates it as a marina, which is an industrial sector that is subject to regulation under DEQ's Industrial Storm Water General Permit (ISWGP). However, the specific activities which are regulated by the ISWGP (i.e. dry dock, boat maintenance, and/or boat repair) are not conducted onsite, and therefore regulation of the storm water runoff from these activities is not required. The 2013 permit also requires (see Part I.C.2 and Part I.C.8) the permittee to implement Best Management Practices for all activities onsite in order to prevent discharge of wastes to State waters. Additionally, facilities treating domestic effluent which discharge greater than or equal to 1.0 MGD are subject to storm water requirements, but since this facility's design flow is 0.0085 MGD, storm water requirements are not applicable.

- A monitoring frequency reduction was not considered for this facility because it is not yet constructed.

- The permittee's Financial Assurance obligations are not yet applicable.

- The permittee is not a participant in Virginia's Environmental Excellence Program.

- Coordination with the Virginia Department of Health:
  - Office of Drinking Water (East Central): Memo received 7/23/2013 – noted no public water supply intakes within 15 miles downstream of proposed discharge. No objection to permit.
  - Division of Shellfish Sanitation: Memo received 8/23/2013 – noted that the discharge is within condemned shellfish growing waters and will not cause an increase in the size or type of the existing closure.

- This permit reissuance is non-controversial. The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.

- The discharge is in conformance with the existing planning documents for the area (Chesapeake Bay TMDL – technology based TSS limits; Nutrient GP registration, VAN020163; Broad Creek Shellfish TMDL – facility not addressed).

- EPA has waived the right to comment and/or object to the adequacy of the permit.

- The permittee is current on his annual maintenance fees (last payment deposited September 12, 2012).

- The permittee was notified of the expectation to participate in the e-DMR program on 11/19/2012. The permittee is not currently submitting DMR's due to not having a discharge, and therefore has not yet enrolled in the e-DMR program.

- The 2013 permit expiration date is shortened by less than one month from a 5-year expiration term, in order for the next permit term to start with a complete calendar month.

- In accordance with §62.1-44.15:01, a copy of the public notice was mailed on August 22 , 2013 to Matt Walker, Middlesex County Administrator; Wayne H. Jessie, Sr., Chairman of the Middlesex County Board of Supervisors; and Lewis L. Lawrence, III, Executive Director of the Middle Peninsula Planning District Commission.

c. Public Comments: One email was received with comments from a private property owner located on Broad Creek. The letter and DEQ response letter is included in **Attachment H**. No changes were made to the draft permit as a result of public comments.

27. Summary of attachments to this fact sheet:

Attachment A	Flow Frequency Memorandum and 303(d) Fact Sheets
Attachment B	1992 Broad Creek Model in M.D. Phillips September 22, 1992 Memo
Attachment C	Topographic Map
Attachment D	Site Inspection Memo
Attachment E	Effluent Data Used for Limitation Evaluations
Attachment F	2013 and 2008 MSTRANTI and STATS Printouts
Attachment G	Watershed General Permit Registration Statement and Offset Plan
Attachment H	Public Comments and Response to Comments

Attachment A

Flow Frequency Memorandum and 303(d) Fact Sheets

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination/303(d) Status
Dozier's Marine Center STP – VA0087629

TO: Tamira Cohen, Ph.D.

FROM: Jennifer Palmore, P.G.

DATE: June 20, 2013

COPIES: File

The Doziers Marine Center's sewage treatment plant is permitted to discharge to Broad Creek near Stingray Point, VA. The outfall will be located at rivermile 3-BRD000.38. Flow frequencies have been requested for use in developing effluent limitations for the VPDES permit.

Broad Creek is tidally influenced at the discharge point. Flow frequencies cannot be determined for tidal waters therefore, previous modeling and dilution ratios should be used to evaluate the effluent's impact on the water body. The Water Quality Standards designate Broad Creek as estuarine waters; therefore, saltwater criteria should be used.

During the 2010 305(b)/303(d) Water Quality Assessment, Broad Creek was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). The applicable fact sheets are attached. The Recreation Use is impaired due to Enterococcus violations. The Aquatic Life Use is impaired because the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, failed the Open Water summer 30-day mean dissolved oxygen criteria. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use is fully supporting and the Fish Consumption Use was not assessed. The area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

During the draft 2012 Assessment, Broad Creek was considered a Category 4A water ("Impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific pollutant(s) is complete and US EPA approved.") The applicable fact sheet is attached. The Aquatic Life Use is impaired for dissolved oxygen. Although the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, met all assessed dissolved oxygen criteria, the segment is considered impaired due to EPA policy. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use and Recreation Uses are fully supporting and the Fish Consumption Use was not assessed. As stated above, the area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

Water quality data from monitoring station 3-BRD000.31 is attached. The station is located on Broad Creek at the end of Route 636, which is across the stream from Dozier's Marine.

Broad Creek has historically been considered a Tier 2 water because previous modeling determined that "the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable (sic) effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be

true to a least an aggregate flow of 1.0 MGD" (Phillips, 1992). However, review of local monitoring data from station 3-BRD000.31 shows that on two occasions dissolved oxygen values were at or only slightly above 5.0 mg/L. Due to this the stream should be considered Tier 1.

The Broad Creek Shellfish TMDL was approved by the EPA on 6/7/2006 and by the SWCB on 6/27/2007. The facility was not addressed in the TMDL because the portion of Broad Creek in which the marine center is located is a prohibited zone and the Shellfish Use is considered to be removed.

Dozier's Marine Center was included in the Chesapeake Bay TMDL, which addressed dissolved oxygen, chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the mainstem Bay and its tidal tributaries. The TMDL was approved by the EPA on 12/29/2010. The discharge was included in the aggregated loads for non-significant wastewater dischargers in the Rappahannock River mesohaline estuary (RPPMH). The nutrient allocations are administered through the Watershed Nutrient General Permit; the TSS allocations are considered aggregated and facilities with technology-based TSS limits are considered to be in conformance with the TMDL.

If you have any questions concerning this analysis, please let me know.

Station ID	Collection Date	Depth Desc	Depth	Temp Celcius	Field pH	Do Probe	Salinity
3-BRD000.31	5/24/2007	S	0.3	20.3	7.5	7.7	12.2
3-BRD000.31	7/19/2007	S	0.3	28.5	7.3	6.5	16.5
3-BRD000.31	9/20/2007	S	0.3	21.8	7.6	5.2	19.6
3-BRD000.31	12/6/2007	S	0.3	5.7	7.8	11.8	20.1
3-BRD000.31	1/31/2008	S	0.3	5.9	7.6	10.5	18
3-BRD000.31	3/27/2008	S	0.3	11.9	7.5	8.8	17
3-BRD000.31	6/3/2008	S	0.3	24.4	7.5	8.4	11.6
3-BRD000.31	7/24/2008	S	0.3	29	8	6.7	15.2
3-BRD000.31	9/29/2008	S	0.3	23.3	8.1	8.4	17.4
3-BRD000.31	11/17/2008	S	0.3	12.1	7.9	9	19.8
3-BRD000.31	2/18/2009	S	0.3	5.7	7.4	10.8	17.4
3-BRD000.31	5/4/2009	S	0.3	19.6	7.9	8.2	15.5
3-BRD000.31	6/15/2009	S	0.3	26	7.8	5.8	15
3-BRD000.31	8/31/2009	S	0.3	27.3	7.7	5	16.8
3-BRD000.31	10/26/2009	S	0.3	16.2	8	8.9	18.3
3-BRD000.31	12/28/2009	S	0.3	7	7.8	13.2	13.2
3-BRD000.31	1/12/2010	S	0.3	1.3	7.4	14.5	12.1
3-BRD000.31	3/23/2010	S	0.3	11	8.2	11.9	10.1
3-BRD000.31	5/20/2010	S	0.3	19.7	7.8	9.6	11.7
3-BRD000.31	7/28/2010	S	0.3	29.9	8.1	6.5	15.9
3-BRD000.31	9/30/2010	S	0.3	23	7.4	6.5	16.2
3-BRD000.31	11/15/2010	S	0.3	11.9	7.3	8.7	17.9
90th Percentile				**28.4**	**8.1**		
10th Percentile				**5.7**	**7.4**		
Average							**15.8**

2010 Fact Sheets for 303(d) Waters

RIVER BASIN: Rappahannock River Basin **HYDROLOGIC UNIT:** 02080104

STREAM NAME: **Rappahannock River**

TMDL ID: **RPPMH-DO-BAY** **2010 IMPAIRED AREA ID:** CB-RPPMH

ASSESSMENT CATEGORY: 5A **TMDL DUE DATE:** 2010

IMPAIRED SIZE: 123.53 - Sq. Mi. **Watershed:** VAP-E22E

INITIAL LISTING: 1998

UPSTREAM LIMIT: Mesohaline boundary

DOWNSTREAM LIMIT: Mouth at Chesapeake Bay

The mesohaline Rappahannock River and tidal tributaries.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Open Water Subuse - Not Supporting, Deep Water Subuse - Not Supporting, Deep Channel Use - Fully Supporting

IMPAIRMENT: Dissolved Oxygen

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle dissolved oxygen exceedances were noted in deepwater and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The new Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. The mesohaline portion of the Rappahannock fails the Open Water Subuse's summer 30-day dissolved oxygen criteria and applicable areas fail the Deep Water 30-day dissolved oxygen criteria. During the 2008 cycle, the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria was violated, however the segment met the use during the 2010 cycle and will be delisted. The Open Water Subuse's 30-day rest-of-year standard was met and there was insufficient data to assess the other dissolved oxygen criteria.

IMPAIRMENT SOURCE: Point Source, Nonpoint Source

Tributary strategy has been developed.

RECOMMENDATION: Problem Characterization

2010 Fact Sheets for 303(d) Waters

RIVER BASIN: Rappahannock River Basin **HYDROLOGIC UNIT:** 02080104

STREAM NAME: **Broad Creek**

TMDL ID: **E26E-20-BAC** **2010 IMPAIRED AREA ID:** CB-RPPMH

ASSESSMENT CATEGORY: 5A **TMDL DUE DATE:** 2018

IMPAIRED SIZE: 0.161 - Sq. Mi. **Watershed:** VAP-E26E

INITIAL LISTING: 2006

UPSTREAM LIMIT: Tidal limit

DOWNSTREAM LIMIT: Mouth at Rappahannock

The tidal Broad Creek embayment.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Recreation Use - Not Supporting

IMPAIRMENT: Enterococci

Broad Creek was considered fully supporting but threatened of the Recreation Use in 1998 due to BPJ (6 dischargers into embayment), but there were acceptable fecal coliform exceedance rates in both the 2002 and 2004 cycles, so it was dropped in 2004.

In the 2006 cycle, the fecal coliform exceedance rate remained acceptable (0/23), however the enterococci exceedance rate failed, therefore the segment was considered impaired of the Recreation Use. The impairment continues in the 2010 cycle due to an Enterococci exceedance rate of 3/27. The TMDL is due in 2018.

IMPAIRMENT SOURCE: Nonpoint Sources

The source is considered unknown.

RECOMMENDATION: Problem Characterization

2012 Fact Sheets for 303(d) Waters

RIVER BASIN: Rappahannock River Basin **HYDROLOGIC UNIT:** 02080104

STREAM NAME: Rappahannock River

TMDL ID: RPPMH-DO-BAY **2012 IMPAIRED AREA ID:** CB-RPPMH

ASSESSMENT CATEGORY: 4A/3B **TMDL DUE DATE:** 2010

IMPAIRED SIZE: 123.53 - Sq. Mi. **Watershed:** VAP-E22E

INITIAL LISTING: 1998

UPSTREAM LIMIT: Mesohaline boundary

DOWNSTREAM LIMIT: Mouth at Chesapeake Bay

The mesohaline Rappahannock River and tidal tributaries.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Open Water Subuse - Insufficient Information, Deep Water Use - Not Supporting, Deep Channel Use - Not Supporting

IMPAIRMENT: Dissolved Oxygen

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle dissolved oxygen exceedances were noted in deep water and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The new Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. The mesohaline portion of the Rappahannock previously failed the Open Water Subuse's summer 30-day mean dissolved oxygen criteria, however during the 2012 cycle the segment meets both the summer and rest-of-year criteria. Due to EPA policy, the segment must remain impaired for DO until all criteria can be assessed.

Applicable areas fail the Deep Water 30-day mean dissolved oxygen criteria. During the 2008 cycle, the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria was violated, however the segment met the use during the 2010 cycle and was delisted; it is re-impaired during the 2012 cycle. There is insufficient data to assess the other dissolved oxygen criteria. The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010, therefore RPPMH is considered Category 4A.

The mesohaline portion of the Rappahannock River does not meet the Shallow Water Subuse's submerged aquatic vegetation acreage standards. However, RPPMH had acceptable water clarity acreage during the 2010 cycle and the segment was delisted; it remains fully supporting in the 2012 cycle (Category 2C).

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010, therefore RPPMH is considered Category 4A.

IMPAIRMENT SOURCE: Point Source, Nonpoint Source

The Chesapeake Bay TMDL allocated total nitrogen, total phosphorus, and total suspended solids to point and nonpoint sources throughout the watershed.

RECOMMENDATION: Implementation

Attachment B

1992 Broad Creek Model in M.D. Phillips September 22, 1992 Memo

Attached to FS

A#.3

Original model

M E M O R A N D U M

Virginia Water Control Board

Office of Water Resources Management

4900 Cox Road P.O. Box 11143 Richmond, Va.

STATE WATER CONTROL BOARD

SEP 23 1992

Tidewater Region
Kilmarnock Office

Subject: Broad Creek Model
To: E.R.Simmons, KRO
From: M.D.Phillips
Date: September 22, 1992
Copies:

I have looked at the Broad Creek situation and assessed several different modeling approaches, all give the same results. I looked at a simple flushing approach, a tidal prism approach and used AUTOSS with very conservative parameters. All models agree that the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to at least an aggregate flow of 1.0 MGD.

The models and approaches I have looked at are all limited because there is no data available. However, I did use very conservative assumptions and believe that the results are dependable. The basic reason for the lack of impact is essentially the rapid tidal flushing; I estimate that about 1/4 to 1/3 of the volumn of the creek is exchanged over each tidal period. This coupled with the very large dilution provided for the six small STP flows (6000 to 20,000 GPD for a total of about 60,000 GPD) results in essentially no impact.

I share your concern about the proliferation of small treatment plants at the marinas on this creek and believe that a central facility discharging outside the confines of Broad Creek would be much better in the long run. However, it appears that there will be little or no observable efects on the dissolved oxygen at this time.

I will only attach one model run (AUTOSS) as illustrative of the results. The bottom line is that we can assign secondary limits until the aggregate flows approach 1.0 MGD.

Regarding toxic material (ammonia, etc.), the models I used do not have the capability to look at mixing for toxics. Since the two existing and 4 proposed STPs are all surface discharges to saline waters I have no models to apply at this time. I would recommend that you simply use the guidance package recently provided for the implementation of toxics limits.

cc. Rod Smith, Jim Uzel page 1 - MRPDC

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
Water Division

4900 Cox Road Glen Allen, Virginia 23060

Attachment 8

MEMORANDUM

APR 15 1993

Subject: Mixing in Broad Creek

To: Debra Barnes, KRO

From: M. Dale Phillips Dale

Date: April 13, 1993

Copies:

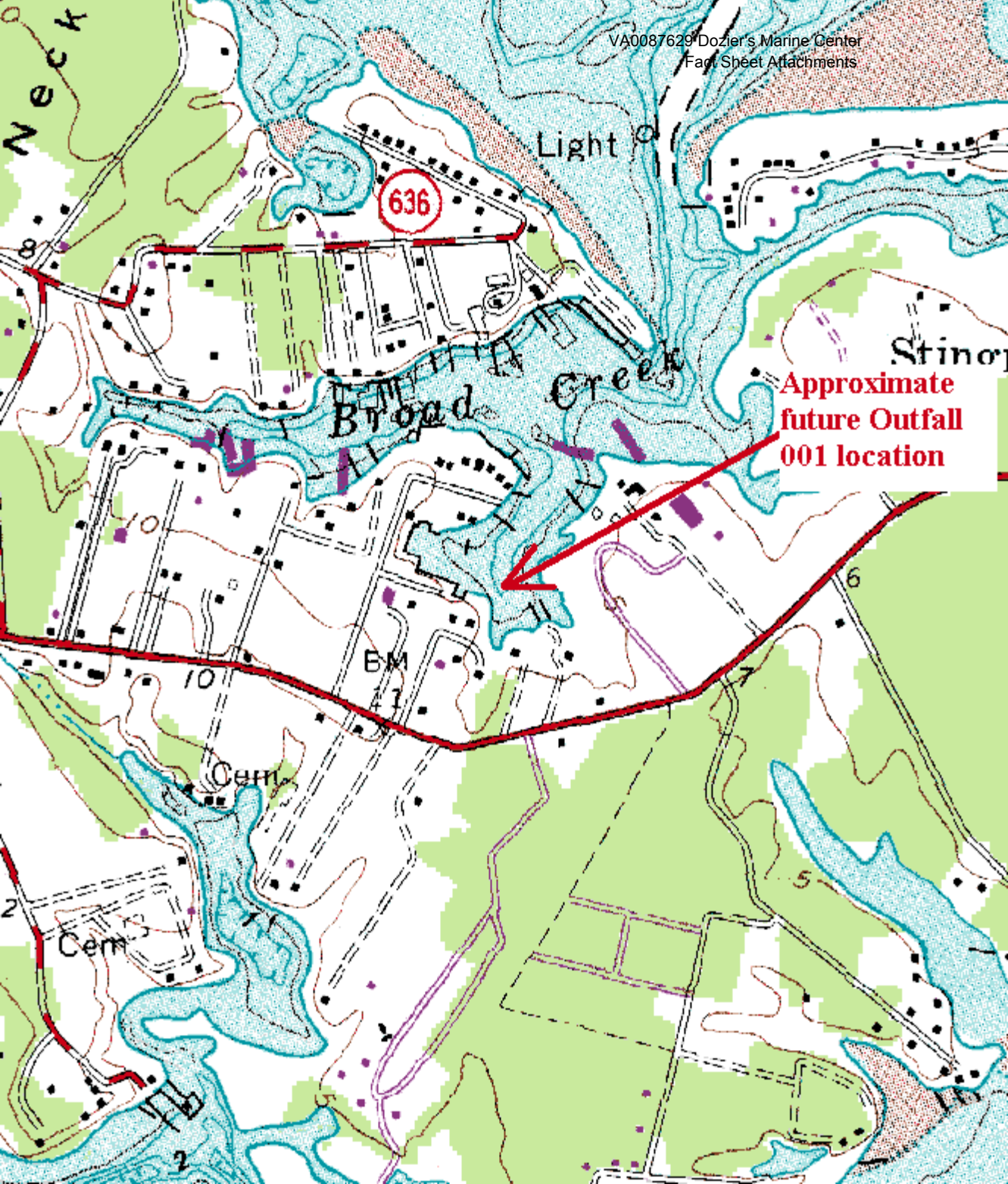
I have reviewed the modeling submitted by P. M. Brooks and believe that it is sufficiently accurate for us to accept the estimated dilutions that result. These dilution factors and corresponding IWCs are:

Norton	D = 1:10.9;	IWC = 9.2%
Dozier	D = 1:14.3;	IWC = 7.0%
Green	D = 1:16.9;	IWC = 5.9%

You may use these dilutions/IWCs for determining the acute WLAs for these dischargers. Based on the tidal prism modeling, I do not believe that chronic limits are necessary as the far field dilution appears to be well over 1000:1.

Attachment C

Topographic Map


Neck
Light
636
Broad Creek
Approximate future Outfall 001 location
BM
Cem
Cem

Attachment D

Site Inspection Memo

Attachment A[1]

Department of Environmental Quality
VPDES/VPA Inspection

Documentation of 'FFY Scheduled' Inspection Change

Facility Name: Dozier's Marine Center
Permit Number: VA0087629
Facility Classification: ☐ Major ☒ Minor ☐ Minor/Small

Date of proposed change: **2/8/13**
Date of last 'Full' Inspection: 4/29/08
Date of last Inspection: 4/29/08

Water Compliance Manager Name & Date: **Kyle I. Winter, PE 2/8/13**
Regional Office: **PRO**

Reason for Change (check all that apply):

- ☐ Compliance History **CH**
- ☐ Environmental Excellence **EE**
- ☐ Environmental Sensitivity **ES**
- ☐ Multi-media **MM**
- ☐ Agency Exposure/Sectors **AES**

Provide details for above checked items: N/A

Proposed Actions:

- ☒ Reduced CEI Frequency for baseline requirement ('Reduced')
- ☐ Reconnaissance and/or Sampling Inspection (Added)
- ☐ CEI Tech and/or Lab Inspection (Added)
- ☐ CEI Focused Inspection
- ☐ Pretreatment Audit (Added)
- ☐ Pretreatment SIU Inspection (Added)

Other Comments:
This facility is removed from the FY13 inspection schedule. The permit writer visited the site in November 2012 as part of permit reissuance and confirmed the plant is not built. DEQ permit writers now issue CTC's and CTO's, so DEQ will be aware if the permittee decides to construct his facility prior to commencement of discharge. If the facility is built, inspectors will schedule for inspection.

[1] Revised: 02/02/2010 – ***Reduced Inspection Frequency for Major baseline requirement ('Reduced')*** added.

Attachment E

Ambient and Effluent Data Used for Limitation Evaluations

Bay Marine Ltd. STP (VA0087173) Effluent Data:

Date	pH (MAX)
10-Aug-10	7.24
10-Sep-10	7.23
10-Oct-10	7.21
10-Nov-10	7.17
10-Dec-10	7.12
10-Jan-11	-
10-Feb-11	-
10-Mar-11	-
10-Apr-11	7.08
10-May-11	7.12
10-Jun-11	-
10-Jul-11	7.69
10-Aug-11	-
10-Sep-11	-
10-Oct-11	-
10-Nov-11	7.38
10-Dec-11	7.43
10-Jan-12	7.82
10-Aug-12	7.81
10-Sep-12	7.46
10-Oct-12	7.64
10-Nov-12	7.55
10-Dec-12	7.8
10-Jan-13	-
10-Feb-13	-
10-Mar-13	-
10-Apr-13	-
10-May-13	7.48
10-Jun-13	8.13
10-Jul-13	7.62
90th percentile	**7.81**
10th percentile	**7.12**

Attachment F

2013 and 2008 MSTRANTI and STATS Printouts

2013 Reissuance

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dozier's Marine Center
Receiving Stream:
Permit No.: VA0087629
Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =		mg/l
90th % Temperature (Annual) =	28.4	(° C)
90th % Temperature (Winter) =		(° C)
90th % Maximum pH =	8.1	
10th % Maximum pH =	7.4	
Tier Designation (1 or 2) =	1	
Early Life Stages Present Y/N =	Y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	15.8	(g/kg)

Mixing Information

Design Flow (MGD)	0.0085
Acute WLA multiplier	14.3
Chronic WLA multiplier	50
Human health WLA multiplier	50

Effluent Information

Mean Hardness (as CaCO3) =		mg/L
90 % Temperature (Annual) =	28	(° C)
90 % Temperature (Winter) =		(° C)
90 % Maximum pH =	7.81	SU
10 % Maximum pH =	7.12	SU
Discharge Flow =	0.0085	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	9.9E+02	--	--	5.0E+04	--	--	--	--	--	--	**--**	**--**	**5.0E+04**
Acrolein	0	--	--	9.3E+00	--	--	4.7E+02	--	--	--	--	--	--	**--**	**--**	**4.7E+02**
Acrylonitrile[C]	0	--	--	2.5E+00	--	--	1.3E+02	--	--	--	--	--	--	**--**	**--**	**1.3E+02**
Aldrin [C]	0	1.3E+00	--	5.0E-04	1.9E+01	--	2.5E-02	--	--	--	--	--	--	**1.9E+01**	**--**	**2.5E-02**
Ammonia-N (mg/l) - Annual	0	2.63E+00	3.80E-01	--	3.76E+01	1.90E+01	--	--	--	--	--	--	--	**3.76E+01**	**1.90E+01**	**--**
Ammonia-N (mg/l) - Winter	0	2.04E+01	2.95E+00	--	2.92E+02	1.47E+02	--	--	--	--	--	--	--	**2.92E+02**	**1.47E+02**	**--**
Anthracene	0	--	--	4.0E+04	--	--	2.0E+06	--	--	--	--	--	--	**--**	**--**	**2.0E+06**
Antimony	0	--	--	6.4E+02	--	--	3.2E+04	--	--	--	--	--	--	**--**	**--**	**3.2E+04**
Arsenic	0	6.9E+01	3.6E+01	--	9.9E+02	1.8E+03	--	--	--	--	--	--	--	**9.9E+02**	**1.8E+03**	**--**
Benzene [C]	0	--	--	5.1E+02	--	--	2.6E+04	--	--	--	--	--	--	**--**	**--**	**2.6E+04**
Benzidine[C]	0	--	--	2.0E-03	--	--	1.0E-01	--	--	--	--	--	--	**--**	**--**	**1.0E-01**
Benzo (a) anthracene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (b) fluoranthene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (k) fluoranthene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (a) pyrene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Bis2-Chloroethyl Ether[C]	0	--	--	5.3E+00	--	--	2.7E+02	--	--	--	--	--	--	**--**	**--**	**2.7E+02**
Bis2-Chloroisopropyl Ether	0	--	--	6.5E+04	--	--	3.3E+06	--	--	--	--	--	--	**--**	**--**	**3.3E+06**
Bis2-Ethylhexyl Phthalate[C]	0	--	--	2.2E+01	--	--	1.1E+03	--	--	--	--	--	--	**--**	**--**	**1.1E+03**
Bromoform [C]	0	--	--	1.4E+03	--	--	7.0E+04	--	--	--	--	--	--	**--**	**--**	**7.0E+04**
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	9.5E+04	--	--	--	--	--	--	**--**	**--**	**9.5E+04**
Cadmium	0	4.0E+01	8.8E+00	--	5.7E+02	4.4E+02	--	--	--	--	--	--	--	**5.7E+02**	**4.4E+02**	**--**
Carbon Tetrachloride [C]	0	--	--	1.6E+01	--	--	8.0E+02	--	--	--	--	--	--	**--**	**--**	**8.0E+02**
Chlordane [C]	0	9.0E-02	4.0E-03	8.1E-03	1.3E+00	2.0E-01	4.1E-01	--	--	--	--	--	--	**1.3E+00**	**2.0E-01**	**4.1E-01**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
TRC	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	1.9E+02	3.8E+02	--	--	--	--	--	--	--	**1.9E+02**	**3.8E+02**	**--**
Chlorobenzene	0	--	--	1.6E+03	--	--	8.0E+04	--	--	--	--	--	--	**--**	**--**	**8.0E+04**
Chlorodibromomethane[C]	0	--	--	1.3E+02	--	--	6.5E+03	--	--	--	--	--	--	**--**	**--**	**6.5E+03**
Chloroform	0	--	--	1.1E+04	--	--	5.5E+05	--	--	--	--	--	--	**--**	**--**	**5.5E+05**
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	8.0E+04	--	--	--	--	--	--	**--**	**--**	**8.0E+04**
2-Chlorophenol	0	--	--	1.5E+02	--	--	7.5E+03	--	--	--	--	--	--	**--**	**--**	**7.5E+03**
Chlorpyrifos	0	1.1E-02	5.6E-03	--	1.6E-01	2.8E-01	--	--	--	--	--	--	--	**1.6E-01**	**2.8E-01**	**--**
Chromium III	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chromium VI	0	1.1E+03	5.0E+01	--	1.6E+04	2.5E+03	--	--	--	--	--	--	--	**1.6E+04**	**2.5E+03**	**--**
Chrysene [C]	0	--	--	1.8E-02	--	--	9.0E-01	--	--	--	--	--	--	**--**	**--**	**9.0E-01**
Copper	0	9.3E+00	6.0E+00	--	1.3E+02	3.0E+02	--	--	--	--	--	--	--	**1.3E+02**	**3.0E+02**	**--**
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	1.4E+01	5.0E+01	8.0E+05	--	--	--	--	--	--	**1.4E+01**	**5.0E+01**	**8.0E+05**
DDD [C]	0	--	--	3.1E-03	--	--	1.6E-01	--	--	--	--	--	--	**--**	**--**	**1.6E-01**
DDE [C]	0	--	--	2.2E-03	--	--	1.1E-01	--	--	--	--	--	--	**--**	**--**	**1.1E-01**
DDT [C]	0	1.3E-01	1.0E-03	2.2E-03	1.9E+00	5.0E-02	1.1E-01	--	--	--	--	--	--	**1.9E+00**	**5.0E-02**	**1.1E-01**
Demeton	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Diazinon	0	8.2E-01	8.2E-01	--	1.2E+01	4.1E+01	--	--	--	--	--	--	--	**1.2E+01**	**4.1E+01**	**--**
Dibenz(a,h)anthracene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	6.5E+04	--	--	--	--	--	--	**--**	**--**	**6.5E+04**
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	4.8E+04	--	--	--	--	--	--	**--**	**--**	**4.8E+04**
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	9.5E+03	--	--	--	--	--	--	**--**	**--**	**9.5E+03**
3,3-Dichlorobenzidine[C]	0	--	--	2.8E-01	--	--	1.4E+01	--	--	--	--	--	--	**--**	**--**	**1.4E+01**
Dichlorobromomethane [C]	0	--	--	1.7E+02	--	--	8.5E+03	--	--	--	--	--	--	**--**	**--**	**8.5E+03**
1,2-Dichloroethane [C]	0	--	--	3.7E+02	--	--	1.9E+04	--	--	--	--	--	--	**--**	**--**	**1.9E+04**
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	3.6E+05	--	--	--	--	--	--	**--**	**--**	**3.6E+05**
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	5.0E+05	--	--	--	--	--	--	**--**	**--**	**5.0E+05**
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	1.5E+04	--	--	--	--	--	--	**--**	**--**	**1.5E+04**
1,2-Dichloropropane[C]	0	--	--	1.5E+02	--	--	7.5E+03	--	--	--	--	--	--	**--**	**--**	**7.5E+03**
1,3-Dichloropropene[C]	0	--	--	2.1E+02	--	--	1.1E+04	--	--	--	--	--	--	**--**	**--**	**1.1E+04**
Dieldrin [C]	0	7.1E-01	1.9E-03	5.4E-04	1.0E+01	9.5E-02	2.7E-02	--	--	--	--	--	--	**1.0E+01**	**9.5E-02**	**2.7E-02**
Diethyl Phthalate	0	--	--	4.4E+04	--	--	2.2E+06	--	--	--	--	--	--	**--**	**--**	**2.2E+06**
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	4.3E+04	--	--	--	--	--	--	**--**	**--**	**4.3E+04**
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	5.5E+07	--	--	--	--	--	--	**--**	**--**	**5.5E+07**
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	2.3E+05	--	--	--	--	--	--	**--**	**--**	**2.3E+05**
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	2.7E+05	--	--	--	--	--	--	**--**	**--**	**2.7E+05**
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	1.4E+04	--	--	--	--	--	--	**--**	**--**	**1.4E+04**
2,4-Dinitrotoluene [C]	0	--	--	3.4E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.1E-08	--	--	2.6E-06	--	--	--	--	--	--	**--**	**--**	**2.6E-06**
1,2-Diphenylhydrazine[C]	0	--	--	2.0E+00	--	--	1.0E+02	--	--	--	--	--	--	**--**	**--**	**1.0E+02**
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	4.9E-01	4.4E-01	4.5E+03	--	--	--	--	--	--	**4.9E-01**	**4.4E-01**	**4.5E+03**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	4.9E-01	4.4E-01	4.5E+03	--	--	--	--	--	--	**4.9E-01**	**4.4E-01**	**4.5E+03**
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	4.9E-01	4.4E-01	--	--	--	--	--	--	--	**4.9E-01**	**4.4E-01**	**--**
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	4.5E+03	--	--	--	--	--	--	**--**	**--**	**4.5E+03**
Endrin	0	3.7E-02	2.3E-03	6.0E-02	5.3E-01	1.2E-01	3.0E+00	--	--	--	--	--	--	**5.3E-01**	**1.2E-01**	**3.0E+00**
Endrin Aldehyde	0	--	--	3.0E-01	--	--	1.5E+01	--	--	--	--	--	--	**--**	**--**	**1.5E+01**
Ethylbenzene	0	--	--	2.1E+03	--	--	1.1E+05	--	--	--	--	--	--	**--**	**--**	**1.1E+05**
Fluoranthene	0	--	--	1.4E+02	--	--	7.0E+03	--	--	--	--	--	--	**--**	**--**	**7.0E+03**
Fluorene	0	--	--	5.3E+03	--	--	2.7E+05	--	--	--	--	--	--	**--**	**--**	**2.7E+05**
Guthion	0	--	1.0E-02	--	--	5.0E-01	--	--	--	--	--	--	--	**--**	**5.0E-01**	**--**
Heptachlor [C]	0	5.3E-02	3.6E-03	7.9E-04	7.6E-01	1.8E-01	4.0E-02	--	--	--	--	--	--	**7.6E-01**	**1.8E-01**	**4.0E-02**
Heptachlor Epoxide[C]	0	5.3E-02	3.6E-03	3.9E-04	7.6E-01	1.8E-01	2.0E-02	--	--	--	--	--	--	**7.6E-01**	**1.8E-01**	**2.0E-02**
Hexachlorobenzene[C]	0	--	--	2.9E-03	--	--	1.5E-01	--	--	--	--	--	--	**--**	**--**	**1.5E-01**
Hexachlorobutadiene[C]	0	--	--	1.8E+02	--	--	9.0E+03	--	--	--	--	--	--	**--**	**--**	**9.0E+03**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	4.9E-02	--	--	2.5E+00	--	--	--	--	--	--	**--**	**--**	**2.5E+00**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	1.7E-01	--	--	8.5E+00	--	--	--	--	--	--	**--**	**--**	**8.5E+00**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	1.6E-01	--	1.8E+00	2.3E+00	--	9.0E+01	--	--	--	--	--	--	**2.3E+00**	**--**	**9.0E+01**
Hexachlorocyclopentadiene	0	--	--	1.1E+03	--	--	5.5E+04	--	--	--	--	--	--	**--**	**--**	**5.5E+04**
Hexachloroethane[C]	0	--	--	3.3E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Hydrogen Sulfide	0	--	2.0E+00	--	--	1.0E+02	--	--	--	--	--	--	--	**--**	**1.0E+02**	**--**
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Isophorone[C]	0	--	--	9.6E+03	--	--	4.8E+05	--	--	--	--	--	--	**--**	**--**	**4.8E+05**
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Lead	0	2.4E+02	9.3E+00	--	3.4E+03	4.7E+02	--	--	--	--	--	--	--	**3.4E+03**	**4.7E+02**	**--**
Malathion	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Mercury	0	1.8E+00	9.4E-01	--	2.6E+01	4.7E+01	--	--	--	--	--	--	--	**2.6E+01**	**4.7E+01**	**--**
Methyl Bromide	0	--	--	1.5E+03	--	--	7.5E+04	--	--	--	--	--	--	**--**	**--**	**7.5E+04**
Methylene Chloride [C]	0	--	--	5.9E+03	--	--	3.0E+05	--	--	--	--	--	--	**--**	**--**	**3.0E+05**
Methoxychlor	0	--	3.0E-02	--	--	1.5E+00	--	--	--	--	--	--	--	**--**	**1.5E+00**	**--**
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Nickel	0	7.4E+01	8.2E+00	4.6E+03	1.1E+03	4.1E+02	2.3E+05	--	--	--	--	--	--	**1.1E+03**	**4.1E+02**	**2.3E+05**
Nitrobenzene	0	--	--	6.9E+02	--	--	3.5E+04	--	--	--	--	--	--	**--**	**--**	**3.5E+04**
N-Nitrosodimethylamine[C]	0	--	--	3.0E+01	--	--	1.5E+03	--	--	--	--	--	--	**--**	**--**	**1.5E+03**
N-Nitrosodiphenylamine[C]	0	--	--	6.0E+01	--	--	3.0E+03	--	--	--	--	--	--	**--**	**--**	**3.0E+03**
N-Nitrosodi-n-propylamine[C]	0	--	--	5.1E+00	--	--	2.6E+02	--	--	--	--	--	--	**--**	**--**	**2.6E+02**
Nonylphenol	0	7.0E+00	1.7E+00	--	1.0E+02	8.5E+01	--	--	--	--	--	--	--	**1.0E+02**	**8.5E+01**	**--**
Parathion	0	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**	**--**
PCB Total[C]	0	--	3.0E-02	6.4E-04	--	1.5E+00	3.2E-02	--	--	--	--	--	--	**--**	**1.5E+00**	**3.2E-02**
Pentachlorophenol [C]	0	1.3E+01	7.9E+00	3.0E+01	1.9E+02	4.0E+02	1.5E+03	--	--	--	--	--	--	**1.9E+02**	**4.0E+02**	**1.5E+03**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Phenol	0	--	--	8.6E+05	--	--	4.3E+07	--	--	--	--	--	--	**--**	**--**	**4.3E+07**
Phosphorus (Elemental)	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Pyrene	0	--	--	4.0E+03	--	--	2.0E+05	--	--	--	--	--	--	**--**	**--**	**2.0E+05**
Selenium	0	2.9E+02	7.1E+01	4.2E+03	4.1E+03	3.6E+03	2.1E+05	--	--	--	--	--	--	**4.1E+03**	**3.6E+03**	**2.1E+05**
Silver	0	1.9E+00	--	--	2.7E+01	--	--	--	--	--	--	--	--	**2.7E+01**	**--**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	4.0E+01	--	--	2.0E+03	--	--	--	--	--	--	**--**	**--**	**2.0E+03**
Tetrachloroethylene[C]	0	--	--	3.3E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Thallium	0	--	--	4.7E-01	--	--	2.4E+01	--	--	--	--	--	--	**--**	**--**	**2.4E+01**
Toluene	0	--	--	6.0E+03	--	--	3.0E+05	--	--	--	--	--	--	**--**	**--**	**3.0E+05**
Toxaphene [C]	0	2.1E-01	2.0E-04	2.8E-03	3.0E+00	1.0E-02	1.4E-01	--	--	--	--	--	--	**3.0E+00**	**1.0E-02**	**1.4E-01**
Tributyltin	0	4.2E-01	7.4E-03	--	6.0E+00	3.7E-01	--	--	--	--	--	--	--	**6.0E+00**	**3.7E-01**	**--**
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	3.5E+03	--	--	--	--	--	--	**--**	**--**	**3.5E+03**
1,1,2-Trichloroethane[C]	0	--	--	1.6E+02	--	--	8.0E+03	--	--	--	--	--	--	**--**	**--**	**8.0E+03**
Trichloroethylene [C]	0	--	--	3.0E+02	--	--	1.5E+04	--	--	--	--	--	--	**--**	**--**	**1.5E+04**
2,4,6-Trichlorophenol [C]	0	--	--	2.4E+01	--	--	1.2E+03	--	--	--	--	--	--	**--**	**--**	**1.2E+03**
Vinyl Chloride[C]	0	--	--	2.4E+01	--	--	1.2E+03	--	--	--	--	--	--	**--**	**--**	**1.2E+03**
Zinc	0	9.0E+01	8.1E+01	2.6E+04	1.3E+03	4.1E+03	1.3E+06	--	--	--	--	--	--	**1.3E+03**	**4.1E+03**	**1.3E+06**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific Target Value (SSTV)
Antimony	3.2E+04
Arsenic III	3.9E+02
Cadmium	2.3E+02
Chromium III	#VALUE!
Chromium VI	1.5E+03
Copper	5.3E+01
Lead	2.8E+02
Mercury	1.0E+01
Nickel	2.5E+02
Selenium	1.7E+03
Silver	1.1E+01
Zinc	5.1E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

7/12/2013 11:41:46 AM

Facility = Dozier's Marine
Chemical = Ammonia, mg/L
Chronic averaging period = 30
WLAa = 37.6
WLAc = 19
Q.L. = 0.20
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

8/12/2013 10:46:40 AM

Facility = Dozier's Marine
Chemical = TRC, mg/L
Chronic averaging period = 4
WLAa = 0.19
WLAc = 0.38
Q.L. = 0.10
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 20
Variance = 144
C.V. = 0.6
97th percentile daily values = 48.6683
97th percentile 4 day average = 33.2758
97th percentile 30 day average= 24.1210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 0.19
Average Weekly limit = 0.19
Average Monthly LImit = 0.19

The data are:

20

2008 Reissuance

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dozier's Marine Center
Receiving Stream: Broad Creek

Permit No.: VA0087629

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =		mg/l
90th % Temperature (Annual) =	28.2	(^{o} C)
90th % Temperature (Winter) =		(^{o} C)
90th % Maximum pH =	8.13	
10th % Maximum pH =	7.37	
Tier Designation (1 or 2) =	1	
Early Life Stages Present Y/N =	y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	15.91	(g/kg)

Mixing Information

Design Flow (MGD)	0.0085
Acute WLA multiplier	15.3
Chronic WLA multiplier	
Human health WLA multiplier	51

Effluent Information

Mean Hardness (as CaCO3) =	25	mg/L
90 % Temperature (Annual) =	24.9	(^{o} C)
90 % Temperature (Winter) =		(^{o} C)
90 % Maximum pH =	8.82	SU
10 % Maximum pH =	8.04	SU
Discharge Flow =	0.0085	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	2.7E+03	--	--	1.4E+05	--	--	--	--	--	--	**--**	**--**	**1.4E+05**
Acrolein		--	--	7.8E+02	--	--	4.0E+04	--	--	--	--	--	--	**--**	**--**	**4.0E+04**
Acrylonitrile[C]		--	--	6.6E+00	--	--	3.4E+02	--	--	--	--	--	--	**--**	**--**	**3.4E+02**
Aldrin [C]	0	1.3E+00	--	1.4E-03	2.0E+01	--	7.1E-02	--	--	--	--	--	--	**2.0E+01**	**--**	**7.1E-02**
Ammonia-N (mg/l) - Annual	0	2.3E+00	#DIV/0!	--	3.5E+01	#DIV/0!	--	--	--	--	--	--	--	**3.5E+01**	**#DIV/0!**	**--**
Ammonia-N (mg/l) - Winter	0	1.7E+01	#DIV/0!	--	2.6E+02	#DIV/0!	--	--	--	--	--	--	--	**2.6E+02**	**#DIV/0!**	**--**
Anthracene	0	--	--	1.1E+05	--	--	5.6E+06	--	--	--	--	--	--	**--**	**--**	**5.6E+06**
Antimony	0	--	--	4.3E+03	--	--	2.2E+05	--	--	--	--	--	--	**--**	**--**	**2.2E+05**
Arsenic	0	6.9E+01	3.6E+01	--	1.1E+03	0.0E+00	--	--	--	--	--	--	--	**1.1E+03**	**0.0E+00**	**--**
Benzene [C]	0	--	--	7.1E+02	--	--	3.6E+04	--	--	--	--	--	--	**--**	**--**	**3.6E+04**
Benzidine[C]		--	--	5.4E-03	--	--	2.8E-01	--	--	--	--	--	--	**--**	**--**	**2.8E-01**
Benzo (a) anthracene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Benzo (b) fluoranthene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Benzo (k) fluoranthene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Benzo (a) pyrene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Bis2-Chloroethyl Ether		--	--	1.4E+01	--	--	7.1E+02	--	--	--	--	--	--	**--**	**--**	**7.1E+02**
Bis2-Chloroisopropyl Ether		--	--	1.7E+05	--	--	8.7E+06	--	--	--	--	--	--	**--**	**--**	**8.7E+06**
Bromoform [C]	0	--	--	3.6E+03	--	--	1.8E+05	--	--	--	--	--	--	**--**	**--**	**1.8E+05**
Butylbenzylphthalate	0	--	--	5.2E+03	--	--	2.7E+05	--	--	--	--	--	--	**--**	**--**	**2.7E+05**
Cadmium	0	4.0E+01	8.8E+00	--	6.1E+02	0.0E+00	--	--	--	--	--	--	--	**6.1E+02**	**0.0E+00**	**--**
Carbon Tetrachloride [C]	0	--	--	4.4E+01	--	--	2.2E+03	--	--	--	--	--	--	**--**	**--**	**2.2E+03**
Chlordane [C]	0	9.0E-02	4.0E-03	2.2E-02	1.4E+00	0.0E+00	1.1E+00	--	--	--	--	--	--	**1.4E+00**	**0.0E+00**	**1.1E+00**
TRC	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	2.0E+02	0.0E+00	--	--	--	--	--	--	--	**2.0E+02**	**0.0E+00**	**--**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Chlorobenzene		--	--	2.1E+04	--	--	1.1E+06	--	--	--	--	--	--	**--**	**--**	**1.1E+06**
Chlorodibromomethane[C]	0	--	--	3.4E+02	--	--	1.7E+04	--	--	--	--	--	--	**--**	**--**	**1.7E+04**
Chloroform [C]	0	--	--	2.9E+04	--	--	1.5E+06	--	--	--	--	--	--	**--**	**--**	**1.5E+06**
2-Chloronaphthalene	0	--	--	4.3E+03	--	--	2.2E+05	--	--	--	--	--	--	**--**	**--**	**2.2E+05**
2-Chlorophenol	0	--	--	4.0E+02	--	--	2.0E+04	--	--	--	--	--	--	**--**	**--**	**2.0E+04**
Chlorpyrifos	0	1.1E-02	5.6E-03	--	1.7E-01	0.0E+00	--	--	--	--	--	--	--	**1.7E-01**	**0.0E+00**	**--**
Chromium III	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chromium VI	0	1.1E+03	5.0E+01	--	1.7E+04	0.0E+00	--	--	--	--	--	--	--	**1.7E+04**	**0.0E+00**	**--**
Chrysene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Copper	0	9.3E+00	6.0E+00	--	1.4E+02	0.0E+00	--	--	--	--	--	--	--	**1.4E+02**	**0.0E+00**	**--**
Cyanide	0	1.0E+00	1.0E+00	2.2E+05	1.5E+01	0.0E+00	1.1E+07	--	--	--	--	--	--	**1.5E+01**	**0.0E+00**	**1.1E+07**
DDD [C]	0	--	--	8.4E-03	--	--	4.3E-01	--	--	--	--	--	--	**--**	**--**	**4.3E-01**
DDE [C]	0	--	--	5.9E-03	--	--	3.0E-01	--	--	--	--	--	--	**--**	**--**	**3.0E-01**
DDT [C]	0	1.3E-01	1.0E-03	5.9E-03	2.0E+00	0.0E+00	3.0E-01	--	--	--	--	--	--	**2.0E+00**	**0.0E+00**	**3.0E-01**
Demeton	0	--	1.0E-01	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Dibenz(a,h)anthracene [C]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Dibutyl phthalate	0	--	--	1.2E+04	--	--	6.1E+05	--	--	--	--	--	--	**--**	**--**	**6.1E+05**
Dichloromethane (Methylene Chloride)[C]	0	--	--	1.6E+04	--	--	8.2E+05	--	--	--	--	--	--	**--**	**--**	**8.2E+05**
1,2-Dichlorobenzene	0	--	--	1.7E+04	--	--	8.7E+05	--	--	--	--	--	--	**--**	**--**	**8.7E+05**
1,3-Dichlorobenzene	0	--	--	2.6E+03	--	--	1.3E+05	--	--	--	--	--	--	**--**	**--**	**1.3E+05**
1,4-Dichlorobenzene	0	--	--	2.6E+03	--	--	1.3E+05	--	--	--	--	--	--	**--**	**--**	**1.3E+05**
3,3-Dichlorobenzidine[C]	0	--	--	7.7E-01	--	--	3.9E+01	--	--	--	--	--	--			
Dichlorobromomethane [C]	0	--	--	4.6E+02	--	--	2.3E+04	--	--	--	--	--	--	**--**	**--**	**2.3E+04**
1,2-Dichloroethane [C]	0	--	--	9.9E+02	--	--	5.0E+04	--	--	--	--	--	--	**--**	**--**	**5.0E+04**
1,1-Dichloroethylene	0	--	--	1.7E+04	--	--	8.7E+05	--	--	--	--	--	--	**--**	**--**	**8.7E+05**
1,2-trans-dichloroethylene	0	--	--	1.4E+05	--	--	7.1E+06	--	--	--	--	--	--	**--**	**--**	**7.1E+06**
2,4-Dichlorophenol	0	--	--	7.9E+02	--	--	4.0E+04	--	--	--	--	--	--	**--**	**--**	**4.0E+04**
1,2-Dichloropropane[C]	0	--	--	3.9E+02	--	--	2.0E+04	--	--	--	--	--	--	**--**	**--**	**2.0E+04**
1,3-Dichloropropene	0	--	--	1.7E+03	--	--	8.7E+04	--	--	--	--	--	--	**--**	**--**	**8.7E+04**
Dieldrin [C]	0	7.1E-01	1.9E-03	1.4E-03	1.1E+01	0.0E+00	7.1E-02	--	--	--	--	--	--	**1.1E+01**	**0.0E+00**	**7.1E-02**
Diethyl Phthalate	0	--	--	1.2E+05	--	--	6.1E+06	--	--	--	--	--	--	**--**	**--**	**6.1E+06**
Di-2-Ethylhexyl Phthalate [C]	0	--	--	5.9E+01	--	--	3.0E+03	--	--	--	--	--	--	**--**	**--**	**3.0E+03**
2,4-Dimethylphenol	0	--	--	2.3E+03	--	--	1.2E+05	--	--	--	--	--	--	**--**	**--**	**1.2E+05**
Dimethyl Phthalate	0	--	--	2.9E+06	--	--	1.5E+08	--	--	--	--	--	--	**--**	**--**	**1.5E+08**
Di-n-Butyl Phthalate	0	--	--	1.2E+04	--	--	6.1E+05	--	--	--	--	--	--	**--**	**--**	**6.1E+05**
2,4 Dinitrophenol	0	--	--	1.4E+04	--	--	7.1E+05	--	--	--	--	--	--	**--**	**--**	**7.1E+05**
2-Methyl-4,6-Dinitrophenol	0	--	--	7.65E+02	--	--	3.9E+04	--	--	--	--	--	--	**--**	**--**	**3.9E+04**
2,4-Dinitrotoluene [C]	0	--	--	9.1E+01	--	--	4.6E+03	--	--	--	--	--	--	**--**	**--**	**4.6E+03**
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	1.2E-06	--	--	6.1E-05	--	--	--	--	--	--	**--**	**--**	**6.1E-05**
1,2-Diphenylhydrazine[C]	0	--	--	5.4E+00	--	--	2.8E+02	--	--	--	--	--	--	**--**	**--**	**2.8E+02**
Alpha-Endosulfan	0	3.4E-02	8.7E-03	2.4E+02	5.2E-01	0.0E+00	1.2E+04	--	--	--	--	--	--	**5.2E-01**	**0.0E+00**	**1.2E+04**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Beta-Endosulfan	0	3.4E-02	8.7E-03	2.4E+02	5.2E-01	0.0E+00	1.2E+04	--	--	--	--	--	--	**5.2E-01**	**0.0E+00**	**1.2E+04**
Endosulfan Sulfate	0	--	--	2.4E+02	--	--	1.2E+04	--	--	--	--	--	--	**--**	**--**	**1.2E+04**
Endrin	0	3.7E-02	2.3E-03	8.1E-01	5.7E-01	0.0E+00	4.1E+01	--	--	--	--	--	--	**5.7E-01**	**0.0E+00**	**4.1E+01**
Endrin Aldehyde	0	--	--	8.1E-01	--	--	4.1E+01	--	--	--	--	--	--	**--**	**--**	**4.1E+01**
Ethylbenzene	0	--	--	2.9E+04	--	--	1.5E+06	--	--	--	--	--	--	**--**	**--**	**1.5E+06**
Fluoranthene	0	--	--	3.7E+02	--	--	1.9E+04	--	--	--	--	--	--	**--**	**--**	**1.9E+04**
Fluorene	0	--	--	1.4E+04	--	--	7.1E+05	--	--	--	--	--	--	**--**	**--**	**7.1E+05**
Guthion	0	--	1.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Heptachlor [C]	0	5.3E-02	3.6E-03	2.1E-03	8.1E-01	0.0E+00	1.1E-01	--	--	--	--	--	--	**8.1E-01**	**0.0E+00**	**1.1E-01**
Heptachlor Epoxide[C]	0	5.3E-02	3.6E-03	1.1E-03	8.1E-01	0.0E+00	5.6E-02	--	--	--	--	--	--	**8.1E-01**	**0.0E+00**	**5.6E-02**
Hexachlorobenzene[C]	0	--	--	7.7E-03	--	--	3.9E-01	--	--	--	--	--	--	**--**	**--**	**3.9E-01**
Hexachlorobutadiene[C]	0	--	--	5.0E+02	--	--	2.6E+04	--	--	--	--	--	--	**--**	**--**	**2.6E+04**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	1.3E-01	--	--	6.6E+00	--	--	--	--	--	--	**--**	**--**	**6.6E+00**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	4.6E-01	--	--	2.3E+01	--	--	--	--	--	--	**--**	**--**	**2.3E+01**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	1.6E-01	--	6.3E-01	2.4E+00	--	3.2E+01	--	--	--	--	--	--	**2.4E+00**	**--**	**3.2E+01**
Hexachlorocyclopentadiene	0	--	--	1.7E+04	--	--	8.7E+05	--	--	--	--	--	--	**--**	**--**	**8.7E+05**
Hexachloroethane[C]	0	--	--	8.9E+01	--	--	4.5E+03	--	--	--	--	--	--	**--**	**--**	**4.5E+03**
Hydrogen Sulfide	0	--	2.0E+00		--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Indeno (1,2,3-cd) pyrene C	0	--	--	4.9E-01	--	--	2.5E+01	--	--	--	--	--	--	**--**	**--**	**2.5E+01**
Isophorone[C]	0	--	--	2.6E+04	--	--	1.3E+06	--	--	--	--	--	--	**--**	**--**	**1.3E+06**
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Lead	0	2.4E+02	9.3E+00	--	3.7E+03	0.0E+00	--	--	--	--	--	--	--	**3.7E+03**	**0.0E+00**	**--**
Malathion	0	--	1.0E-01	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Mercury	0	1.8E+00	9.4E-01	5.1E-02	2.8E+01	0.0E+00	2.6E+00	--	--	--	--	--	--	**2.8E+01**	**0.0E+00**	**2.6E+00**
Methyl Bromide	0	--	--	4.0E+03	--	--	2.0E+05	--	--	--	--	--	--	**--**	**--**	**2.0E+05**
Methoxychlor	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Monochlorobenzene	0	--	--	2.1E+04	--	--	1.1E+06	--	--	--	--	--	--	**--**	**--**	**1.1E+06**
Nickel	0	7.4E+01	8.2E+00	4.6E+03	1.1E+03	0.0E+00	2.3E+05	--	--	--	--	--	--	**1.1E+03**	**0.0E+00**	**2.3E+05**
Nitrobenzene	0	--	--	1.9E+03	--	--	9.7E+04	--	--	--	--	--	--	**--**	**--**	**9.7E+04**
N-Nitrosodimethylamine[C]	0	--	--	8.1E+01	--	--	4.1E+03	--	--	--	--	--	--	**--**	**--**	**4.1E+03**
N-Nitrosodiphenylamine[C]	0	--	--	1.6E+02	--	--	8.2E+03	--	--	--	--	--	--	**--**	**--**	**8.2E+03**
N-Nitrosodi-n-propylamine[C]	0	--	--	1.4E+01	--	--	7.1E+02	--	--	--	--	--	--	**--**	**--**	**7.1E+02**
Parathion	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
PCB-1016	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB-1221	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB-1232	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB-1242	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB-1248	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB-1254	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
PCB-1260	0	--	3.0E-02	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
PCB Total[C]	0	--	--	1.7E-03	--	--	8.7E-02	--	--	--	--	--	--	**--**	**--**	**8.7E-02**
Pentachlorophenol [C]	0	1.3E+01	7.9E+00	8.2E+01	2.0E+02	0.0E+00	4.2E+03	--	--	--	--	--	--	**2.0E+02**	**0.0E+00**	**4.2E+03**
Phenol	0	--	--	4.6E+06	--	--	2.3E+08	--	--	--	--	--	--	**--**	**--**	**2.3E+08**
Phosphorus (Elemental)	0	--	0.1	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Pyrene	0	--	--	1.1E+04	--	--	5.6E+05	--	--	--	--	--	--	**--**	**--**	**5.6E+05**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**	**--**
Gross Alpha Activity	0	--	--	1.5E+01	--	--	7.7E+02	--	--	--	--	--	--	**--**	**--**	**7.7E+02**
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	--	--	2.0E+02	--	--	--	--	--	--	**--**	**--**	**2.0E+02**
Strontium-90	0	--	--	8.0E+00	--	--	4.1E+02	--	--	--	--	--	--	**--**	**--**	**4.1E+02**
Tritium	0	--	--	2.0E+04	--	--	1.0E+06	--	--	--	--	--	--	**--**	**--**	**1.0E+06**
Selenium	0	3.0E+02	7.1E+01	1.1E+04	4.6E+03	0.0E+00	5.6E+05	--	--	--	--	--	--	**4.6E+03**	**0.0E+00**	**5.6E+05**
Silver	0	2.0E+00	--	--	3.1E+01	--	--	--	--	--	--	--	--	**3.1E+01**	**--**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	1.1E+02	--	--	5.6E+03	--	--	--	--	--	--	**--**	**--**	**5.6E+03**
Tetrachloroethylene[C]	0	--	--	8.9E+01	--	--	4.5E+03	--	--	--	--	--	--	**--**	**--**	**4.5E+03**
Thallium	0	--	--	6.3E+00	--	--	3.2E+02	--	--	--	--	--	--	**--**	**--**	**3.2E+02**
Toluene	0	--	--	2.0E+05	--	--	1.0E+07	--	--	--	--	--	--	**--**	**--**	**1.0E+07**
Toxaphene [C]	0	2.1E-01	2.0E-04	7.5E-03	3.2E+00	0.0E+00	3.8E-01	--	--	--	--	--	--	**3.2E+00**	**0.0E+00**	**3.8E-01**
Tributyltin	0	3.8E-01	1.0E-03	--	5.8E+00	0.0E+00	--	--	--	--	--	--	--	**5.8E+00**	**0.0E+00**	**--**
1,2,4-Trichlorobenzene	0	--	--	9.4E+02	--	--	4.8E+04	--	--	--	--	--	--	**--**	**--**	**4.8E+04**
1,1,2-Trichloroethane[C]		--	--	4.2E+02	--	--	2.1E+04	--	--	--	--	--	--	**--**	**--**	**2.1E+04**
Trichloroethylene [C]	0	--	--	8.1E+02	--	--	4.1E+04	--	--	--	--	--	--	**--**	**--**	**4.1E+04**
2,4,6-Trichlorophenol [C]	0	--	--	6.5E+01	--	--	3.3E+03	--	--	--	--	--	--	**--**	**--**	**3.3E+03**
Vinyl Chloride[C]	0	--	--	6.1E+01	--	--	3.1E+03	--	--	--	--	--	--	**--**	**--**	**3.1E+03**
Zinc	0	9.0E+01	8.1E+01	6.9E+04	1.4E+03	0.0E+00	3.5E+06	--	--	--	--	--	--	**1.4E+03**	**0.0E+00**	**3.5E+06**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific Target Value (SSTV)
Antimony	2.2E+05
Arsenic III	0.0E+00
Cadmium	0.0E+00
Chromium III	#VALUE!
Chromium VI	0.0E+00
Copper	0.0E+00
Lead	0.0E+00
Mercury	0.0E+00
Nickel	0.0E+00
Selenium	0.0E+00
Silver	1.2E+01
Zinc	0.0E+00

Note: do not use QL's lower than the minimum QL's provided in agency guidance

2/19/2008 1:37:14 PM

Facility = Dozier's Marine Center
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 35
WLAc =
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

2/19/2008 1:39:41 PM

Facility = Dozier's Marine Center
Chemical = TRC (Chlorine Producing Oxidants)
Chronic averaging period = 4
WLAa = 200
WLAc =
Q.L. = 0.1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 20000
Variance = 1440000
C.V. = 0.6
97th percentile daily values = 48668.3
97th percentile 4 day average = 33275.8
97th percentile 30 day average= 24121.0
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 200
Average Weekly limit = 200
Average Monthly LImit = 200

The data are:

20000

Attachment G

Watershed General Permit Registration Statement and Offset Plan

Cohen, Tamira (DEQ)

From: Hammond, Drew (DEQ)
Sent: Monday, April 15, 2013 12:04 PM
To: Kazio, Jeremy (DEQ)
Subject: RE: VPDES Permit VA0087629 Dozier Marine Center

Jeremy,

The Watershed GP no. for this facility is VAN020163. In addition, please be sure to include the Offset Special Condition in this facility's individual permit (similar to that included in the individual permit for Regatta Point Yacht Club).

Thanks,
Drew

From: Doreen Rosenbaum [mailto:Doreen@ProgressEngineers.com]
Sent: Friday, April 12, 2013 2:32 PM
To: Hammond, Drew (DEQ)
Cc: Kazio, Jeremy (DEQ); Jack Dozier; Bill.Rosenbaum@ProgressEngineers.com
Subject: VPDES Permit VA0087629 Dozier Marine Center

Mr. Hammond,

On behalf of Jack Dozier please find attached the Registration Statement and offset plan for the subject permit.
A copy of the permit application fee form and check are also attached.

Doreen Rosenbaum

PROGRESS ENGINEERS, P.C.
46 New Street
P.O. Box 518
Saluda, VA 23149

Email: Doreen@ProgressEngineers.com
Ph: 804.758.4577
Fax: 804.758.4578

PLEASE NOTE: Progress Engineers, P.C. has moved its office to 46 New St. in Saluda.
Our P.O. box and telephone numbers will remain the same.
To view the location on Mapquest, please click the following link: http://mapq.st/12j4Dp2

I am using the Free version of SPAMfighter.
SPAMfighter has removed 21431 of my spam emails to date.

Do you have a slow PC? Try a free scan!

Cohen, Tamira (DEQ)

From: Doreen Rosenbaum [Doreen@ProgressEngineers.com]
Sent: Friday, April 12, 2013 2:32 PM
To: Hammond, Drew (DEQ)
Cc: Kazio, Jeremy (DEQ); Jack Dozier; Bill.Rosenbaum@ProgressEngineers.com
Subject: VPDES Permit VA0087629 Dozier Marine Center
Attachments: Doziers Marine VPDES VAN00RegStmt signed 4-8-13.pdf; Doziers Marine Stmt Regarding offsets - 4-8-13.pdf; Water Permit Fee Form VA0087629 - 4-12-13.pdf

Mr. Hammond,

On behalf of Jack Dozier please find attached the Registration Statement and offset plan for the subject permit.
A copy of the permit application fee form and check are also attached.

Doreen Rosenbaum

PROGRESS ENGINEERS, P.C.
46 New Street
P.O. Box 518
Saluda, VA 23149

Email: Doreen@ProgressEngineers.com
Ph: 804.758.4577
Fax: 804.758.4578

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I am using the Free version of SPAMfighter.
SPAMfighter has removed 21431 of my spam emails to date.

Do you have a slow PC? Try a free scan!

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT REGISTRATION STATEMENT FOR TOTAL NITROGEN AND TOTAL PHOSPHORUS DISCHARGES AND NUTRIENT TRADING IN THE CHESAPEAKE WATERSHED IN VIRGINIA

1. APPLICANT INFORMATION

A. Name of Facility: Dozier Marine Center STP

B. Facility Owner: John C. Dozier

C. Owner's Mailing Address

a. Street or P.O. Box P.O. Box 1188

b. City or Town Deltaville c. State VA d. Zip Code 23043

e. Phone Number 804.776.8400 f. Fax Number 804.776.0672

g. E-mail address jcd990@gmail.com

D. Facility Location: Route 33 at Broad Creek
Street No., Route No., or Other Identifier

Middlesex
County

E. Is the operator of the facility also the owner? ☒ Yes ☐ No
If No, complete F. & G.

F. Name of Operator: John C. Dozier

G. Operator's Mailing Address

a. Street or P.O. Box P.O. Box 1188

b. City or Town Deltaville c. State VA d. Zip Code 23043

e. Phone Number 804.776.8400 f. Fax Number 804.776.0672

g. E-mail address jcd990@gmail.com

2. FACILITY INFORMATION

Does this facility currently have a VPDES permit? ☒ Yes ☐ No

If no, has a permit been applied for? ☐ Yes ☐ No

If yes to either of the above questions, provide permit number. VA0087629

3. **AGGREGATED DISCHARGES**

If the owner or operator listed above desires to aggregate the facility's mass load limits for total nitrogen and total phosphorus with other permitted facilities under common ownership or operation in the same tributary, list all affected facilities and the VPDES permit numbers assigned to these facilities.

Facility Name	VPDES permit number

4. **TRANSFER OF ALLOCATION TO OR FROM ANOTHER FACILITY**

If the owner or operator listed above proposes the exchange of an allocation for total nitrogen or total phosphorus with other permitted facilities, list all affected facilities, the VPDES permit numbers assigned to these facilities, the delivered pounds of total nitrogen or total phosphorus proposed for exchange and the calendar years for which the exchange will be in effect.

Facility	VPDES#	N/P	Delivered pounds	Acquired/transferred?	Calendar years?

Attach a copy of the applicable contract documentation related to the execution of these allocations.

5. **REQUIRED ATTACHMENT FOR NEW AND EXPANDED FACILITIES**

Plan to offset new or increased delivered total nitrogen and delivered total phosphorus loads for a minimum of 5 years.

6. **CERTIFICATION:**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Signature: /JDoz/ Date: 4/8/13

Name of person(s) signing above: John C. Dozier
(printed or typed)

Title(s): Owner

For Department Use Only:

Accepted/Not Accepted by: _____ Date: _____

04/08/13

Dozier Marine Center
VA0087629

General Permit Application
Item 5

Dozier Marine Center has not constructed a treatment facility and therefore has not begun discharging. In completing our application for a general permit, Item 5 requires a "plan to offset new or increased delivered total nitrogen and delivered total phosphorous loads for a minimum of 5 years." We would like to obtain a general permit at this time, but have no present plan to construct a treatment facility and begin discharging during the life of our current permit or during the five years following its renewal, which would run to September 29, 2018. If our plans were to change, we would submit the required five year plan to off-set delivered total nitrogen and delivered total phosphorus to your office for approval prior to commencement of construction of the treatment facility.

Attachment H

Public Comments and Response to Comments

Cohen, Tamira (DEQ)

To: James Mackey
Cc: Adamson, Emilee (DEQ)
Subject: VA0087629 - Dozier's Marine - 2013 permit reissuance
Attachments: VA0087629_permit_2013.docx; VA0087629_FS_2013.pdf

Dear Mr. Mackey,

Thank you for your email received September 20, 2013, during the public comment period for the above noted permit reissuance.

In response to your comments, I have briefly summarized below the process and protective measures taken by the Department of Environmental Quality for the above noted permit reissuance.

The 2013 permit reissuance authorizes the discharge of treated wastewater into State waters from the Dozier's Marine Center wastewater treatment plant at a design flow of 8,500 gallons per day. Although this is a permit reissuance, the Marine Center which will be generating domestic wastewater and the wastewater treatment plant which will treat that wastewater have not yet been built. Sewage is not currently generated from the Marine Center.

DEQ permit processing for the reissuance of this permit included an estimation of effluent characterization for the facility's operating discharge based on performance of other similar facilities, evaluation of any reasonable potential to impact State waters in accordance with the Water Quality Standards regulation, assignment of permit limitations to the facility at levels that will maintain these Standards, assignment of facility monitoring and testing requirements as well as other requirements to demonstrate and ensure that pollutants are not being discharged in violation of permit limitations, and application and/or draft permit reviews by federal and other state agencies. Our evaluation typically incorporates conservative approaches to address the protection of water quality. The Virginia Water Quality Standards, as established by the State (and in accordance with the federal government), are designed and implemented to protect human health, wildlife, and aquatic habitat.

Please note that the Virginia Department of Health's Office of Drinking Water and Division of Shellfish Sanitation were notified of the upcoming reissuance and provided comments. Both divisions of VDH reviewed the discharge location with no objection to the permit. The Division of Shellfish Sanitation did note that the discharge is within condemned shellfish growing waters, but that the discharge will not cause an increase in the size or type of existing closure.

While Broad Creek is a No Discharge Zone (NDZ), this designation prohibits sewage discharges from vessels, which would not otherwise be regulated. The VPDES permit regulations and the customized permit (development described here) provide oversight for the discharges from this facility. This permit is not in conflict with the NDZ designation.

The discharge is also in conformance with existing water quality planning documents for the area including the Chesapeake Bay TMDL. The permittee has registered for the Nutrient General Permit as required given this is a new discharge to the Chesapeake Bay. As a new discharge to the Bay, the permittee will also be required to offset the full loading of total nitrogen and total phosphorus contributed by the discharge to ensure that there is no net increase of nutrients into the Chesapeake Bay.

The Code of Virginia §62.1-44.15:02 identifies the requirements for granting a public hearing as follows: 1) significant public interest, as evidenced by receipt of at least 25 individual requests; 2) substantial, disputed issues relevant to the permit; and 3) requested action that is not on its face inconsistent with, or in violation of State Water Control Law, federal law or any regulation promulgated thereunder. Your request for a public hearing does not meet these requirements.

The above noted permit has been prepared in accordance with all applicable statues, regulations and agency protocols and will be reissued as drafted for the public notice period. The permit and fact sheet for this permit reissuance is available for public viewing if requested and attached for your reference. The final copy of the permit will be signed and available by 9/29/2013 and be effective from 9/29/2013 to 8/31/2018.

If you have further questions, we will be happy to discuss them with you.
Sincerely,

Tamira Cohen : DEQ : (804) 698-4368 : tamira.cohen@deq.virginia.gov

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From: James Mackey [mailto:jmmackey3@gmail.com]
Sent: Friday, September 20, 2013 3:26 PM
To: Cohen, Tamira (DEQ)
Subject: Re: Public Hearing Request

Thank you.

On Fri, Sep 20, 2013 at 2:15 PM, Cohen, Tamira (DEQ) <Tamira.Cohen@deq.virginia.gov> wrote:

Yes – this was received – I'll get back to you on this next week.

Sincerely,

Tamira Cohen

From: James Mackey [mailto:jmmackey3@gmail.com]
Sent: Friday, September 20, 2013 1:22 PM
To: Cohen, Tamira (DEQ)
Subject: Fwd: Public Hearing Request

Just wanted to make sure this was received.

---------- Forwarded message ----------
From: **James Mackey** <jmmackey3@gmail.com>
Date: Thu, Sep 19, 2013 at 1:23 PM
Subject: Public Hearing Request
To: tamira.cohen@deq.virginia.gov

Re: Virginia Pollutant Discharge Elimination System Permit-Wastewater issued by DEQ under the authority of the State Water Control Board. Applicant name, address and permit number: John C. Dozier; PO Box 1188, Deltaville, VA 23043; VA0087629.

Requester: James M. Mackey; III, 341 Shirley Avenue, Deltaville, VA 23043; 804-776-9462 (home), 804-241-4130 (mobile)

I am requesting this Public Hearing because I object to the release of treated sewage wastewater into Broad Creek and am concerned about the negative effects this would have on the quality of water in Broad Creek and the negative health impact to those that use or live on Broad Creek.

As a property owner on Broad Creek, I am well aware of the current "Condemned" status of this body of water and strenuously object to any further discharge to this creek. In fact, this body of water has already been designated a "No Discharge Zone." The quality of the water in Broad Creek directly influences my health and well being, and my lifestyle relative to my ability to enjoy the creek in terms of swimming and the harvesting of shellfish.

Specific to the permit request, I feel there is more information that needs to be communicated to the public:

1. What is the current method of managing sewage at this business, how is that monitored and why is there a need for this discharge instead?

2. Would improvements to the current method be a better alternative?

2. If this permit were approved, how would the discharge be monitored, what reporting would be required, and what safeguards would be in place to ensure that the business is meeting those requirements?

3. How will this business offset any loads of total nitrogen or phosphorous and how will that offset be monitored and reported?

In summary, I object to this draft permit and believe that a public hearing is in the best interests of all in ensuring health, safety and water quality standards.

Thank you for your consideration.

James M. Mackey, III